# CLAIMS

What is claimed is:

1.      A method for topology discovery in an ATM network, the method comprising:

       identifying an active VC between two ATM network device ports; and

       maintaining a link between said ATM network device ports in a topology graph where said active VC has the same VPI/VCI at both of said ports.

2.      A method according to claim 1 wherein said identifying step comprises identifying said active VC as being a VC having a traffic indicator at either of said ports indicating that a flow of bi-directional network traffic has been detected within a user-defined period of time.

3.      A method according to claim 1 wherein said maintaining step comprises maintaining where said devices and said ports have compatible operational profiles.

4.      A method according to claim 1 wherein said maintaining step comprises maintaining where no other ATM device port in said network has a VPI/VCI for an active VC that is the same as the VPI/VCI for said active VC identified at said ports.

5.      A method according to claim 1 wherein said identifying step comprises identifying said active VC in a topology graph of interconnections between a plurality of ATM device ports for which port VC information has been gathered.

6.      A method for topology discovery in an ATM network, the method comprising:

       in a topology graph having at least one link between two ATM device ports:

       maintaining in said topology graph said link between said ATM device ports where an active VC having the same VPI/VCI at both of said ports is identified for said link;

9

removing from said topology graph said link between said ATM device ports where no active VC having the same VPI/VCI at both of said ports is identified for said link.

7.  A method according to claim 6 wherein said removing step comprises removing where at least one of said ports has no active VC.

8.  A method according to claim 6 wherein said removing step comprises removing where an active VC whose VPI/VCI is not defined is found for at least one of said ports.

9.  A method according to claim 6 wherein said removing step comprises removing where an active VC identified at one of said ports is not an active VC at the other of said ports.

10.  A method according to claim 6 wherein said maintaining step comprises maintaining where said devices and said ports have compatible operational profiles, and wherein said removing step comprises removing where said devices or said ports have incompatible operational profiles.

11.  A method according to claim 6 wherein said maintaining step comprises maintaining where no other ATM device port in said network has a VPI/VCI for an active VC that is the same as the VPI/VCI for said active VC identified for said link.

12.  A method according to claim 6 and further comprising removing from said topology graph link between said ATM device ports where another ATM device port in said network has a VPI/VCI for an active VC that is the same as the VPI/VCI for said active VC identified for said link.

13.  A method for topology discovery in an ATM network, the method

10

comprising:

configuring a plurality of active ports of a plurality of ATM devices with a VPI/VCI known not to exist in said network;

establishing a VC between a transmission source within said network and a selected one of said ATM devices along a known path, wherein said selected ATM device has at least one target active port for which a link to any other of said ports is not known to exist in said network;

transmitting a cell from said transmission source to said selected ATM device along said path and via said target port;

detecting the arrival of said cell at any other of said ports; and

where said cell arrives at only one other of said ports, maintaining in a topology graph a link between said target port and said one other of said ports.

14.     A method according to claim 13 wherein said configuring step comprises configuring only those of said ports for which a link to any other of said ports is not known to exist in said network.